

- 18 -

CLAIMS:

1. A device for monitoring fluctuations in an opaque body, the device including:
 - (a) at least one low power microwave emitter for locating adjacent the opaque body;
 - (b) a microwave detector for detecting fluctuations in the scattering characteristics
 - 5 from said opaque body;
 - (c) a signal processing means for analysing said fluctuations from the body so as to thereby derive characteristics about said body.
2. A device as claimed in claim 1 wherein said emitter and detector are formed as one unit.
- 10 3. A device as claimed in claim 1 wherein said opaque body comprises a human body and said signal processing means extracts a heart rate from said fluctuations.
4. A device as claimed in claim 1 wherein said opaque body comprises a human body and said signal processing means extracts a respiration rate from said fluctuations.
5. A device as claimed in claim 1 wherein said device is portable and located near the
- 15 chest of the human.
7. A method of monitoring fluctuations in the density of an opaque body, the method comprising the steps of:
 - (a) locating a low power microwave emitter adjacent said opaque body;
 - (b) monitoring the scattering properties of said opaque body so as to produce a
 - 20 monitor signal;
 - (c) utilising fluctuations in said monitor signal over time to infer fluctuations in said opaque body.
8. A method as claimed in claim 7 wherein said body comprises a human body.
9. A method as claimed in claim 8 wherein said fluctuations include alterations in the
- 25 blood flow rate within the human body.

- 19 -

10. A method as claimed in claim 7 wherein said fluctuations include alterations in the respiration rate in the human body.
11. A method as claimed in claim 7 wherein said low power microwave emitter is located adjacent the chest of the human body.
- 5 12. A method as claimed in claim 7 wherein said low power microwave emitter includes two antennas, one for output and one for input.
13. A method as claimed in claim 7 wherein said low power microwave emitter includes only one antenna.
14. A remote monitoring system for monitoring a series of patients at remote
- 10 locations, said monitoring systems including:
- (a) a series of portable monitoring units for monitoring fluctuations in a human, the monitoring units including at least one low power microwave emitter for locating adjacent the human body, a microwave detector for detecting in the scattering characteristics from the human body; a signal processing means for analysing said
 - 15 fluctuations in the power so as to thereby derive characteristics about said body, and a wireless communications interface for communication characteristics about said body with a spatially separated base station;
 - (b) a series of base stations, each further interconnected with an information distribution network, said base stations receiving said characteristics from said portable
 - 20 monitoring units and forwarding them to a centralised computing and storage resource;
 - (c) a centralised computing and storage resource for storing and monitoring said characteristics.
15. A system as claimed in claim 14 wherein said system further includes analysis means for analysing said characteristics for predetermined behaviours and raising a
- 25 notification alarm upon the occurrence of said predetermined behaviours.

- 20 -

16. A method of monitoring fluctuations in the human body substantially as herein described with reference to any one of the embodiments illustrated in the accompanying drawings and/or examples.

17. A method of monitoring fluctuations in the human body substantially as herein
5 described with reference to any one of the embodiments illustrated in the accompanying drawings and/or examples.

18. A device for monitoring fluctuations in the human body substantially as herein described with reference to any one of the embodiments illustrated in the accompanying drawings and/or examples.

10 19. A remote monitoring system substantially as herein described with reference to any one of the embodiments illustrated in the accompanying drawings and/or examples.